

USSR

KSENDZOVSKIY, V. R., et al, Ogneyory, No 3, Mar 70, pp 20-25

control system for the rotary kiln has been checked at the Zaporog refractory plant. The results of the tests have confirmed the effectiveness and economic expediency of using this system for automation of rotary kiln operation.

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USSR

UDC 621.372.852.2

GOZHANKOVSKIY, R. V.

"Distributed RC-Circuits of Step Form as Phase Converters"

Otbor i peredacha inform. Resp. mezhved. sb. (Information Sorting and Transmission. Republic Interdepartmental Collection), 1970, vyp. 24, pp 74-78
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A3138)

Translation: This article contains an investigation of distributed RC-circuits formed by series connection of segments of homogeneous RC-lines. It is demonstrated that for a certain selection of structural parameters such circuits have a larger transmission coefficient for a given phase shift than the exponentially constricting distributed RC-circuits with the same general reduction. There are six illustrations and a two-entry bibliography.

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USSR

UDC 538.113:541.515:547.63'118

IL'YASOV, A. V., LEVIN, Ya. A., MOROZOVA, I. D., VAFINA, A. A., GOZMAN, I. P., and ZOROATSKAYA, Ye. I., Institute of Organic Chemistry, imeni A. Ye. Arbuzov, USSR Academy of Sciences, Kazan'

"Delocalization of the Unpaired Electron in Phosphorus-Containing Anion-Radicals"

Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 1, Nov-Dec 1971, pp 108-111

Abstract: It is of current interest whether elements of the third period function as barriers in conjugated systems, or are able to participate in conjugation.

The distribution of spin density in the anion-radical of triphenylphosphine and its oxide were studied. The compounds were prepared by electrochemical reduction. For a more rigorous picture of delocalization of the unpaired electron, completely and partially deuterated Ph_3P and Ph_3PO were synthesized and studied. Dimethylformamide and acetonitrile solutions of the anion-radicals were studied at concentration of ca. $5 \cdot 10^{-3}$ M, using epr spectroscopy.

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L'YASOV, A. V., et al., Doklady Akademii Nauk SSSR, Vol 201, No 1, Nov-Dec 1971, pp 103-111

Based on preliminary results, it is concluded that, unlike compounds of elements of the second period, the electron structure of phosphorus anion-radicals cannot be described by a simple π -electron theory; the so-called d-model must be rejected. The concepts of completely delocalized molecular orbitals and multi-center bonds must be used, with allowance for all valence electrons.

Organophosphorous Compounds

USSR

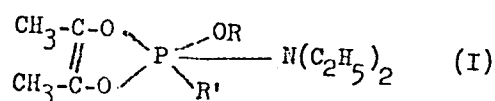
UDC 542.91:661.718.1

GOZMAN, I. P., and RAYEVSKIY, O. A., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"2-Diethylamino-4,5-dimethyl-1,3,2-dioxaphospholenes"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, 1971, pp 1494-1497

Abstract: Descriptions of physical characteristics of products obtained by analyzing 2-diethylamino-4,5-dimethyl-1,3,2-dioxaphospholenes are presented. These products are assigned the structure (I).



Aminodioxaphospholenes are colorless liquids, yellowing instantly on contact with air. They are completely miscible with nonpolar organic solvents and have a distinctive weak odor. Paramagnetic resonance spectra of compounds assigned structure (I) with different substituents contain a sharp singlet peak that is

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GOZMAN, I. P., and RAYEVSKIY, O. A., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, 1971, pp 1494-1497

typical of a methyl at a double bond. The integral intensity of this peak corresponds to two such methyls in the molecule. Thus these data are in agreement with structure (I). This assignment was further supported by infrared spectra of the compounds, found to have weak absorption bands at about 1740 cm^{-1} . This band has been found to characterize tetra-substituted ethylene bonds in dioxaphosphlenes.

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USSR

UDC:541.6 541.124+661.718.1

LEVIN, Ya. A., GOZMAN, I. P., and SIDOROVA, Ye. Ye., Institute of Organic and Physical Chemistry, imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Structure and Mechanism of Formation of Oligophosphonates from Dialkyl Chlorophosphites and Aldehydes"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 70, pp 173-175

Abstract: Two oligomers (1 and 2) were prepared by similar reactions of $(EtO)_2PCl$ with $PrCHO$ or $PhCHO$, respectively. The reaction with $PrCHO$ was exothermic and resulted in loss of $EtCl$. Subsequently, the reacting mixture was heated 4 hr. at 100° , then for 1 hr. at 170° in vacuo. The product was an extremely viscous liquid. The product of the reaction with $PhCHO$ was a glassy solid. A third oligomer (3), a yellow powder, was prepared by a similar reaction from $(iso-BuO)_2PCl$ and $p-(NO_2)C_6H_4CHO$. The polyphosphonate structure $[-P(O)(OR)CH_2O-]_n$ was attributed to the alternating link of the oligomers from their hydrolysis and pyrolysis data. The 1 and 2 oligomers heated with concentrated HCl for 4 hr. yielded 95% $PrCH(OH)PO_3H_2$ and 90% $PhCH(OH)PO_3H_2$, respectively. Pyrolysis of 1 oligomer at $250-270^\circ$ in vacuo gave 10% of a cyclic

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LEVIN, Ya. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 70, pp 173-175

dimer containing the same bonds as 1. An unusual, stepwise polycondensation mechanism was proposed to explain formation of the oligophosphonate molecules with the ester-chloride end groups.

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1/2 013
UNCLASSIFIED
TITLE--STRUCTURE AND MECHANISM OF FORMATION OF OLIGOPHOSPHONATES FROM
DIALKYL CHLOROPHOSPHITES AND ALDEHYDES -U-
AUTHOR-(03)-LEVIN, YA.A., GOZMAN, I.P., SIDOROVA, E.E.
PROCESSING DATE--18 SEP 70
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 173-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ALDEHYDE, ORGANIC PHOTPHORUS COMPOUND, CHLORINATED ORGANIC
COMPOUND, HETEROCYCLIC OXYGEN COMPOUND, OLIGOMER, CHEMICAL
REACTION MECHANISM, EXOTHERMIC REACTION, MOLECULAR STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/1628
STEP NO--UR/0062/70/007/001/0173/0175
CIRC ACCESSION NO--AP0100238
UNCLASSIFIED

2/2

013

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100238

ABSTRACT/EXTRACT--(U) GP-D- ABSTRACT. MIXING EQUIPOLAR AMTS. PRCHO AND (ETO) SUB2 PCL RESULTED IN EXOTHERMIC REACTION AND LOSS OF ETCL, COMPLETED BY 4 HR AT 100DEGREES, TO YIELD AFTER FURTHER 1 HR AT 170DEGREES FINALLY IN VACUO, A VISCOUS OLIGOMER (P10)(OR)CH2 PRIME1 (I) SUBN (I) (R EQUALS ET, R PRIME1 EQUALS PR) (IA); HEATED WITH CONCD. HCL 4 HR THIS GAVE 95PERCENT PRCH(OH)PO SUB3 H SUB2, M. 161-20DEGREES; PYROLYSIS OF IA AT 250-70DEGREES IN VACUO GAVE 10PERCENT II (R EQUALS ET, R PRIME1 EQUALS PR), B SUBO TIMES 035 123-60DEGREES, N PRIME20 SUBD 1.4578, D PRIME20 1.1616. SIMILARLY, REACTION WITH BZH GAVE I (R EQUALS ET, R PRIME1 EQUALS PH), A GLASSY SOLID, WHICH HYDROLYZED WITH AQ. HCL TO 90DEGREES PHCH(OH)PO SUB3 H SUB2, M. 172-3.50DEGREES. SIMILARLY WAS PREPD. THE OLIGOMER FROM RHO-D SUB2 NC SUB6 H SUB4 CHO AND (ISO-BUO) SUB2 PCL, A YELLOW SOLID. A SCHEME FOR FORMATION OF I WAS GIVEN.

UNCLASSIFIED

USSR

UDC 621.317.4

~~GRABAR~~ I. I., MIKHAYLOVSKIY, V. N., SAVEL'YEV, YU. K., L'vov

"Device for Creating Highly Stable Magnetic Fields"

Kiev, Otbor i Peredacha Informatsii, No 27, 1971, pp 104-108

Abstract: A magnetic field intensity stabilizer with a low sensitivity threshold of $0.01\gamma/\text{hertz}^{1/2}$ developed and manufactured by the Institute of Physics and Mathematics of the USSR Academy of Sciences is investigated. The operating principle of the stabilizer is based on compensation for the variations of the magnetic field intensity relative to a previously given value. A sensor the operation of which is based on the Zeeman effect and optical pumping in helium [N. M. Pomerantsev, Geofizicheskaya apparatura, No 34, Nedra Press, Moscow, 1967] is used to measure the magnetic field intensity. The device stabilizes only the values of the modulus of the total magnetic field intensity vector.

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USSR

GRABAR, L. I. et al, Otbor i Peredacha Informatsii, No 77, 1971,
pp 104-108

The investigated device comprises four parts: a magnetically sensitive sensor, a measuring unit, compensating rings and rings with constant bias with a current source. A study was made of the basic factors leading to errors in stabilizing the magnetic field intensity in the case where the magnetic field intensity vector of both pairs of rings is vertical, and the vector of the Earth's magnetic field at the location of the sensor is inclined at about 70° as a result of which rotation of the resultant magnetic field vector occurs on creation of the compensating magnetic field by the rings.

2/2

1/2 032
UNCLASSIFIED
PROCESSING DATE--13NOV70
TITLE--THERMAL DECOMPOSITION OF THE DIMETHYLENE ETHER BOND IN POLYMERS -U-
AUTHOR--(05)-NEVSKIY, V.M., YATSENKO, E.A., GRABARNIK, L.G., SALTIBAYEV,
D.K., BEYSEBAYEV, M.ZH.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKADE. NAUK KAZ. SSR, SER. KHIM. 1970, 20(2), 78-80
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--THERMAL DECOMPOSITION, METHYLENE, ETHER, POLYMERIZATION,
GLYCOL, PYROLYSIS, IR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRADE--3001/0265
STEP NO--UR/0360/70/020/002/0078/0080
CIRC ACCESSION NO--AP0126037
UNCLASSIFIED

2/2 032

CIRC ACCESSION NO--AP0126037

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE POLYMER OF P, HOCH SUB2 C SUB6
H SUB4 CH SUB2 OH IN BULK AT 140DEGREES IN THE PRESENCE OF P, MEC SUB6 H
SUB4 SO SUB3 H GAVE RCH SUB2 OCH SUB2 R PRIME (I). THE PYROLYSIS
PRODUCTS OF I OBTAINED IN VACUUM AT SMALLER THAN OR EQUAL TO 180DEGREES
CONTAINED POLYMERIC ALDEHYDES DUE TO HOMOLYTIC SPLITTING OF I RCH SUB2
AND R PRIME CH SUB2 O, WHICH INTERACT, GIVING R PRIME CHO AND RME. AT
260-360DEGREES, R PRIME CH SUB2 O IS DISPROPORTIONATED TO R PRIME CHO
AND R PRIME CH SUB2 OH, DETECTABLE BY IR SPECTROSCOPY. FACILITY:
INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

1/2 025

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--DETERMINATION OF THE TRACTIVE FORCE IN THE SHAPING OF STEEL TUBES
IN A FUNNEL DIE -U-
AUTHOR--(04)-SHVEYKIN, V.V., GRABARNIK, L.M., PROSKURYAKOV, B.I., PICHURIN,
I.I.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. V. U. Z., CHERNAYA MET., 1970, (2), 66-71

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--STEEL MANUFACTURING PROCESS, ROLLING MILL, FRICTION
COEFFICIENT, DIE FORGING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/0117

STEP NO--UR/0148/70/000/002/0066/0071

CIRC ACCESSION NO--AP0123889

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123889

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MATHEMATICAL ANALYSIS OF THE FORCES INVOLVED IN THE SHAPING OF STEEL TUBES IN A SPECIAL DIE IS PRESENTED, WITH SPECIAL REF. TO THE TRACTIVE FORCES REQUIRED AND THE COMPONENTS OF WHICH THESE ARE MADE UP. THE TOTAL TRACTIVE FORCE INCLUDES THE FORCE REQUIRED TO DEFORM THE MATERIAL PASSING INTO THE DIE, THE FORCE REQUIRED TO OVERCOME FRICTION IN THE LATTER, AND THE FORCES ASSOCIATED WITH THE PASSAGE OF THE TUBE THROUGH THE PULLING ROLLS. THE ADVANTAGES OF THE 'FUNNEL' METHOD OVER CONVENTIONAL TECHNIQUES ARE CONSIDERED.

UNCLASSIFIED

USSR

UDC: 621.791.793:546.821

GRABIN, V. F., Candidate of Technical Sciences, NOVIKOV, YU. K., Engineer, GUREVICH, S. M., Doctor of Technical Sciences, KOMPAN, YA. YU., Candidate of Technical Sciences, NOVIKOVA, D. P., Candidate of Technical Sciences, Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences of the Ukrainian SSR, CHERKASOV, N. I., Engineer, Tashkent Aviation Plant imeni Chkalov

"Structure and Properties of the Weld Zone During the Electro-Slag Welding of High-Strength Titanium Alloy"

Kiev, Avtomaticheskaya Svarka, No 9, Sep 73, pp 20-23

Abstract: The authors study the reasons for the reduced impact strength in the weld zone during the electro-slag welding of titanium alloy; ways are also sought for increasing ductility. The joints were studied with edges 60 mm thick which were done by electro-slag welding at 1700-2000 amps and 24-25 v, using the AN-T4 flux. Metallographic and x-ray analyses of the weld zone metal in its state after welding show that the metal structure is of the martensite alpha prime phase and residual beta phase type. The results show that the reduction of the impact strength in the weld zone during the electro-slag welding of an alloy of the titanium-vanadium-molybdenum-chromium-iron-zirconium system is conditioned by polygonization which is conditioned by a reversible alpha to beta phase transition and by the development of welding stresses during cooling. It is also shown that annealing at 750°C increases the impact strength of the joints.

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USSR

UDC: 539.4

Blashchuk, V. Ye., Voynitskiy, A. G., Grabin, V. F., Gurevich, S. M., Kas'yan, V. V., Novikov, N. V.

"Deformation Resistance of AT-2 and AT-3 Titanium Alloys and Their Welded Joints at High and Low Temperatures"

Kiev, Problemy Prochnosti, No 7, 1972, pp 96-99.

Abstract: The deformation resistance of AT-3 and AT-2 alloys and seam metal is studied in the 400-700°K temperature interval. The strength of the metal of seams in these alloys in the interval up to 500°K does not fall below 90% of the strength of the alloys. The temperatures dependences of strength and yield point of the metals of the seams and alloys are similar. At 700°K, the strength of the seam metal drops to 80% of the strength of AT-3 alloy. The ductility of the seam metals at normal and high temperatures is similar to the ductility of the base alloys, but falls below the ductility of the base metal at low temperatures. As temperature drops, the decrease in the value of coefficient α_K is greater in the alloys than in the seam metal, but throughout the entire temperature range studied $\alpha_K > 1$.

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USSR

UDC 621.791.856.3:669.15-194:546.621

RYABOV, V. R., YUMATOVA, V. I., GRABIN, V. F., BUTNIK, A. P., DZYKOVICH, I. Ya., KUZNETSOV, Ye. P., and BELOZEROV, L. F., Institute of Electric Welding imeni Ye. O. Paton

"Effect of Nickel and Chromium in Steel on the Characteristics of Alloy Combinations"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 71, pp 18-23

Abstract: An investigation was made of the effect of additions of nickel and chromium to Armco iron on the characteristics of the diffusion layer which appears during calorization. The dependence of the durability of steel-aluminum alloys on the additions contained in the steel was also studied. The nickel and chromium alloys with steel were prepared in an induction furnace with a capacity of 7 kg, and the ingots obtained were annealed at 1100-1200°C for three hours. They were then rolled into plates measuring 220 x 1200 x 3 mm. After slag removal, the specimens were calorized in an aluminum bath and cleaned. Tests were made of welds of experimental alloys prepared in the ADSV-2 automatic welder, and the phases of the layers formed during calorization and welding were studied

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USSR

RYABOV, V. R., et al, Avtomaticheskaya Svarka, No 2, Feb 71, pp 18-23

by X-ray analysis. The introduction of nickel and chromium was found to delay the growth of the calorized diffusion layer.

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USSR

UDC: 539.4.019.1

GRABIN, V. F., GUREVICH, S. M., DZYKOVICH, I. Ya., ZAMKOV, V. N., and
SABOKAR', V. K.

"Characteristics of the Formation of Intermetallides in Titanium-Copper
Joints Produced by Explosion Welding"

Moscow, Fizika i Khimiya Obrabotki Materialov, no 6, Nov-Dec 70, pp 65-69

Abstract: Use has been made of micro-x-ray spectral analysis to study the conditions for the formation of intermetallides in the copper-titanium contact zone in explosion welding. The role of niobium in eliminating the tendency to the formation of intermetallides in the process of welding the β -alloy (Ti--37%, Nb--3%, Al with M1 copper) is explained by the low diffusion mobility of niobium in the alloy which controls the formation rate of brittle phases. It is suggested that a higher content of niobium in the alloy will preclude the formation of intermetallides in the welded joint and raise the thermal stability of welded assemblies as well as widen the range of parameters of explosion welding.

1/1

USSR

Welding

UDC 621.791.75.011:669.14.018+669.715

RYABOV, V. R., Candidate of Technical Sciences, YUMATOVA, V. I., Engineer,
BUTNIK, A. L., Engineer, GRABIN, V. F., Candidate of Technical Sciences,
KUZNETSOV, YE. P., Engineer, and EELOZEROV, L. F., Engineer, Institute of
Electric Welding imeni YE. O. Paton

"Effect of Alloying Elements in Steel on the Properties of Steel-Aluminum
Welded Joints"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 71, pp 9-12

Abstract: A study was made of the effect of alloying elements (Nb, Mn, Si, Va, Ti, Zr, Co, Nd) in steel on the properties of the diffusion zone created during aluminizing and welding and on the strength of welded steel-aluminum joints. The preparation of samples and the experimental procedure are described. The results show that introduction of alloying elements into a steel base delays the growth of the aluminized diffusion layer. The silicon introduced substantially reduces the microhardness of the aluminized diffusion layer. The plating method (aluminizing or galvanizing) before welding strongly affects the hardness of the joint.

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USSR

UDC 539.4

NERODENKO, L. M., GRABIN, V. F., and KAS'YAN, V. V., Kiev

"Metallographic Investigation of Microyielding of Copper and Nickel in the Temperature Interval of 450-650°C"

Moscow, Fizika i Khimiya Obrabotki Metallov, No 1, Jan-Feb 71, pp 66-70

Abstract: Microyielding parameters of pure copper and nickel were investigated at elevated temperatures by metallographic methods. Values of the microscopic elastic limit were determined. The energy of the activation process identifying the formation of slip curves in the microyielding phase was found to be 62.8 ± 5 kcal/mol for nickel and $26.3 \pm$ kcal/mol for copper.

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USSR

UDC 536.421.1:669.15.58-196

FRUMIN, I. I., KAS'YAN, V. V., GOLOVASHCHUK, A. I., GRABIN, V. P., and
RYABTSEV, I. A., Electric Welding Institute imeni Ye. O. Paton of the Academy
of Sciences UkrSSR

"Determination of the Heating Temperature In Rolling High-Carbon Chrome-
Titanium Steels"

Moscow, Stal', No 6, Jun 73, pp 546-548

Abstract: The temperatures of beginning fusion of eight high-carbon chromium steels with and without titanium were investigated with the help of a high-temperature microscope. The heating temperature in rolling or forging of ingots of high-carbon alloyed steels weighing up to 50 kg must be 10-20°C below the temperature of beginning fusion. For ingots of higher weight, considering possible development of liquation phenomena, the heating temperature must be somewhat lower. Titanium, hindering the development of a readily fusible ledeburite eutectic, in high carbon chromium steels raises their fusion temperature and extends the temperature range of deformation. The eutectic consists mainly of chromium carbides. The presence of carbon in the investigated steels lowers the fusion temperature and raises the quantity of ledeburite eutectic. Four figures, two tables three bibliographic references. 1/1

- 13 -

Acc. Nr:

APC054373

Abstracting Service:

CHEMICAL ABST. 6-70

Ref. Code:

4R0032

114665n Ultrasonic method for studying the surface corrosion of solids. Dzenis, V.; Grabis, L.; Ratinov, V. B. (Mosk. Avto.-Dorozh. Inst., Moscow, USSR). *Zavod. Lab.* 1970, 36(1), 36-9 (Russ). Piezoconverters contacting the edges of a sample were used to measure the propagation velocity of surface ultrasonic waves. At the same time, the propagation velocities of the longitudinal, C_l , and transverse, C_t , waves were also measured. These measurements, to obtain the desired accuracy, had to be made over a sample ≥ 10 cm. All samples used were $4 \times 4 \times 16$ cm. in size and utilized the same ultrasonic generator and piezoconverters. For all the materials studied, cellulose acetate, hardened cement, plaster and aerated concrete, and various mortars, C_l and C_t were essentially unchanged from their initial values (prior to exposure to the corrosive environment) in comparison to the values found on the corroded sample. For isotropic surfaces, the depth to which the surface waves penetrate a body is $\lambda_R \leq h_R \leq 2\lambda_R$, where λ_R is the wavelength and h_R is the penetration depth. Since these values can be correlated to the depth of corrosive attack, all the required measurements can be made on a single sample without any need for control details.

Herman Koretzky

REEL/FRAME
19831522

USSR

UDC 632.95

TERENT'YEV, A. P., GRABLYAYUSKAS, K. V., and KOTOV, A. L.

"Method of Production of N',N'-Dimethylhydrazide of Succinic Acid"

USSR Author's Certificate No 309004, filed 6/02/70, published 29/09/71;
(Translated from Referativnyy Zhurnal, Khimiya, No 9, 1972, Abstract No
9 N590 P by T. A. Belyayeva).

Translation: Four-hundred point three g of succinic anhydride is added to the mixture of 600 ml CCl_4 and 100 ml DMPA, then a solution of 240.4 g Me_2NNH_2 in 300 ml CCl_4 is added over 30-60 minutes at 20-30° (cooled with ice and salt to maintain the temperature), the mixture is stirred for 2 hours at -20°. The precipitate is separated, washed with CCl_4 , suspended in 1.2 l iso-PrOH, boiled for 30 minutes, cooled to 0°, filtered, the precipitate is washed with iso-PrOH and ethyl acetate, and dried, producing succinic acid N',N'-dimethylhydrazide, yield 85.8-90.8%. IR spectra are presented.

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1/2 034 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--THERMOEMF. AND THERMAL CONDUCTIVITY OF BISMUTH AND ANTIMONY ALLOYS
DOPED WITH TELLURIUM -U-
AUTHOR--(03)-GRABOV, V.M., IVANOV, G.A., PONARYADOV, V.S.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERO. TELA 1970, 12(1), 267-72
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--CRYSTAL LATTICE STRUCTURE, THERMAL CONDUCTIVITY, BISMUTH
ALLOY, ANTIMONY ALLOY, TELLURIUM, METAL COATING, CRYSTAL IMPURITY,
ELECTROMOTIVE FORCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FILE/FNAME--1960/0252 STEP NO--08/0181/70/012/001/0251/.212
CIRC ACCESSION NO--AP 0048531
UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--14SEP70

CIRC ACCESSION NO--AP0048531

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LATTICE THERMAL COND., μ SUB11
PRIME1 AND μ SUB33 PRIME1, WAS DETD. FOR HOMOGENEOUS SINGLE CRYSTAL
SOLID SOLNS. OF BI-SB AT 1000FGREEK WITH 5, 8, 12, 20, AND 30 AT.
PERCENT SB BY EXTRAPOLATION OF LATTICE THERMAL COND. OF ALLOYS DOPED
WITH TE TO ZERO CONTENT OF TE. ELECTRONIC THERMAL COND. AS A RESULT OF
A STRONG DEGENERACY WAS CALCD. WITH THE AID OF THE WIEDEMANN FRANTZ LAW,
USING THE CLASSICAL VALUE OF THE LORENTZ NO. TE IMPURITY, VARYING
ELECTRON CONCN. CONSIDERABLY, AFFECTS THE THERMAL PROPERTIES OF THE
LATTICE ONLY WEAKLY, SO THAT LATTICE CONDS. OF DOPED AND PURE SOLID
SOLNS. PRACTICALLY COINCIDE. LATTICE THERMAL COND. OF THE SOLID SOLNS.
IS SATISFACTORILY DESCRIBED BY THE THEORY OF KLEMENS WITH THE ACCOUNT OF
N PROCESSES OF SCATTERING, WHEN IT IS ASSUMED THAT THE RATIO OF THE
RATES OF NORMAL PROCESSES TO THOSE OF FLOPOVER PROCESSES IS 4. AT
90-300DEGREEK, SMALL AND ANISOTROPIC VALUES OF THERMAL EMF. ARE OBSD.
WHICH ARE EXPLAINED WHEN A HIGHER LYING BAND OF ELECTRONS IS CONSIDERED.
FOR ADDNL. BANDS THE QUADRATIC DISPERSION LAW IS TRUE, AND SIGMA SUB11
CONGRUENT TO 4 SIGMA SUB33. THE MAIN BAND IS NONPARABOLIC. SCATTERING
TAKES PLACE ON ACOUSTICAL PHONONS.

UNCLASSIFIED

USSR

UDC 632.95

MEL'NIKOV, N. N., MEL'NIKOVA, I. A., STONOV, I. D., KAZAKOVA, V. G., and
GRABOVSKAYA, A. K.

"A Herbicide"

USSR Author's Certificate No 300143, filed 17 Sep 69, published 5 Oct 71
(from RZh-Rhimiya, No 11, Jun 72, Abstract No 11R477)

Translation: 2-MeO-4-RNH-6-R'(HO)N-sym-triazines (I) ($R = C_1-C_5$ -alkyl,
 $R' = C_2-C_6$ -alkyl) are utilized as selective herbicides. Compounds I in a
herbicidal dose of 1 kg/hektare in the progermination stage are harmless to
cotton. When used for treatment in the vegetative stage, compounds I with
their high specificity for millet, were found to be very toxic for pigweed,
corn mayweed, amaranth, wild oats and other weeds.

1/1

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1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PHYSIOLOGICAL STUDIES ON ERYTHROMYCIN PRODUCING ORGANISM
ANTINOMYCES ERYTHREUS, STRAIN 1-EPHR -U-
AUTHOR-(04)-LOBANOVA, V.V., GRABOVSKAYA, O.Z., SMIRNOVA, N.V., BRINBERG,
S.L.
CCOUNTRY OF INFO--USSR
SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 6, PP 505-509
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACTINOMYCES, ERYTHROMYCIN, FERMENTATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1869

STEP NO--UR/0297/70/015/006/0505/0509

CIRC ACCESSION NO--AP0125480

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125480

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHYSIOLOGY OF TWO STRAINS OF ACTINOMYCES ERYTHREUS PRODUCING ERYTHROMYCIN WERE STUDIED COMPARATIVELY. THE PHAGE RESISTANT STRAIN IAE-1-EPHR DIFFERED FROM THE INITIAL STRAIN LS-E2577 BY MORE INTENSIVE SYNTHESIS OF ERYTHROMYCIN, AS WELL AS BY ITS ATTITUDE TO MINERAL NITROGEN. NO SIGNIFICANT PHYSIOLOGICAL DIFFERENCES BETWEEN THE STRAINS WERE OBSERVED WITH RESPECT TO THEIR ATTITUDE TO THE CARBON SOURCES, CONCENTRATIONS OF MINERAL PHOSPHORUS AND CORN STEEP LIQUOR. OPTIMAL RATIO OF THE FERMENTATION MEDIUM COMPONENTS OPTIMAL FOR STRAIN I-I-EPHR WAS DETERMINED. THE ANTIBIOTIC YIELD ON THE MEDIUM IN FLASKS AND PILOT PLANT FERMENTORS REACHED 2000 UNITS-ML. THE EFFECT OF TEMPERATURE, AMOUNT OF THE INOCULUM AND CONCENTRATION OF WHALE OIL ON ERYTHROMYCIN BIOSYNTHESIS BY STRAIN I-EPHR WAS FOUND. STRAIN I-EPHR DIFFERED FROM STRAIN 2577 IN ITS MICROMORPHOLOGY BY FORMATION OF HYPHAE OF THE SECONDARY GROWTH. FACILITY: ALL UNION INSTITUTE FOR ANTIBIOTICS, MOSCOW AND SVERDLOVSK PLANT OF MEDICAL PREPARATIONS.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STUDIES ON RESPIRATION OF KANAMYCIN PRODUCING ORGANISM DURING
BIOSYNTHESIS -U-
AUTHOR-(05)-BRINBERG, S.L., GRABOVSKAYA, O.Z., SMIRNOVA, L.V., PAPATSENKO,
V.P., KALMYKOVA, G.V.
COUNTRY OF INFO--USSR
SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 6, PP 500-505
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BIOSYNTHESIS, KANAMYCIN, MICROORGANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1832

STEP NO--UR/0297/70/015/006/0500/0505

CIRC ACCESSION NO--AP0125443

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125443

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF CHANGES IN AERATION AND MIXING CONDITIONS ON RESPIRATION OF THE KANAMYCIN PRODUCING ORGANISM AND BIOSYNTHESIS OF THE ANTIBIOTIC WAS STUDIED. DURING INTENSIVE MIXING AN INCREASE IN THE AMOUNT OF AIR SUPPLIED WITHIN 1 TO 3 VOL-VOL DID NOT AFFECT THE ANTIBIOTIC BIOSYNTHESIS. AT LOW LEVELS OF MIXING IT SLIGHTLY INCREASED. A DECREASE IN THE INTENSITY OF MIXING MARKEDLY SUPPRESSED THE ANTIBIOTIC BIOSYNTHESIS. NATURAL CHANGES IN THE RESPIRATION LEVELS DEPENDANT ON THE MIXING CONDITIONS WERE PROBABLY ABSENT. THE MODE OF ACTION OF THE MIXING INTENSITY ON THE ANTIBIOTIC BIOSYNTHESIS MUST BE ATTRIBUTED TO LEVELLING OF THE CONCENTRATIONS OF THE NUTRIENTS AND METABOLITES NEAR THE CELL WALLS, AND NOT TO IMPROVEMENT OF THE AERATION CONDITIONS. FACILITY: ALL UNION INSTITUTE FOR ANTIBIOTICS, MOSCOW.

UNCLASSIFIED

USSR

UDC: 621.391.2

GRABOVSKIY, A. K.

"Probability of Error in Secondary Channel as a Function of Probability of Error in Linear Section of IKM-30 System"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 2, Mar-Apr 73, pp 80-85.

Abstract: The IKM-30 primary 30-channel pulse-code multiplexing system is being developed for urban telephone system multiplexing. The audio frequency channels of this system can be used for transmission of digital information. This article studies the question of digital information transmission quality in the system, suggesting a method for calculation of one audio frequency channel parameter characterizing the quality of transmission of digital information. It is assumed that the influence of errors in the linear section on secondary multiplexing signals is limited by the stable state of the FM signal. Errors in the linear section are assumed to be individual. The method can be used for any PCM system, considering the peculiarities of the codes used and the characteristics of the compressor and expander.

1/1

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Corrosion

USSR

UDC 669.71.620.193

GRABOVETSKIY, A. P., NEGREBETSKIY, K. N., and KRZHIVITSKIY, B. N., Kiev
Technological Institute of Light Industry

"Corrosion-Fatigue Strength of Duralumin"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1973,
pp 77-78

Abstract: The effect of increasing temperature on the corrosion-fatigue strength of duralumin was experimentally investigated on DLT alloy specimens, 8 mm in diameter, subjected to the action of corrosive medium (tap-water, supplied in drops on the middle part of the specimen) and to cyclic loads, 10, 12, and 15 kgcm/mm² at 20 and 70°C. The test results are discussed by reference to diagrams of longevity and endurance. The longevity increased with increasing temperature the lower the load. It is assumed that the protective oxide film developing at increased temperature is more durable than the oxide film developing at normal temperatures which gives rise to the increase of longevity of specimens under given test conditions. The demonstrated dependence of protective film properties on mechanical loads can be explained by more intensive cracking of the oxide film under the action of high loads. Two figures.

1/1

USSR

UDC 632.95

STEPANOV, M. K., OSIPYAN, V. T., KAZHDAN, V. B., MASLIY, L. K., GRABOVSKIY, B. S., and DUMAYEVA, I. D.

"A Method of Controlling Fleas"

USSR Author's Certificate No 263329, filed 16 Mar 62, published 26 May 70
(from RZh-Khimiya, No 3, 10 Feb 71, Abstract No 3N569)

Translation: Hexamethylenecarbamide (I) is proposed for use as a flea repellent. The substance is an oily, colorless, odorless liquid with a boiling point of 153°C/3 mm, d_4^{20} 1.0489, n_D^{20} 1.5161. Compound I is synthesized by bubbling COCl_2 at 5-10°C through a solution of hexamethylene diamine in an appropriate solvent. The preparation is stable. In 30 days of storage under conditions of intense ventilation, 20-25 percent of compound I or less was volatilized.

1/1

1/2 018 UNCLASSIFIED
TITLE--METHODS FOR COMBATTING FLEAS -U-

PROCESSING DATE--27NOV70

AUTHOR--(05)-STEPANOV, M.K., OSIPIYAN, T.V., KAZHDAN, V.B., MASLIV, L.K.,
GRABOVSKIY, B.S.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,328
REFERENCE--OTKRYTIYA, IZJIBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47171
DATE PUBLISHED--04FEB70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FLEA, INSECTICIDE, CHEMICAL PATENT, AMIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1561

STEP NO--UR/0492/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128956

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--17NOV70
CIRC ACCESSION NO--AA0128956
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. HEXAMETHYLENECARBAMIDE WAS USED AS
A FLEA REPELLENT.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--INDIRECT HEMAGGLUTINATION REACTION USED IN THE DIAGNOSIS OF TYPHOID
-U-
AUTHOR--(02)-GRABOVSKIY, P.M., FEDULOVA, YE.YA.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 3,
PP 51-54
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMAGGLUTINATION, TYPHOID FEVER, DIAGNOSTIC METHODS,
ERYTHROCYTE, ANTIGEN, ANTIBODY

CONTROL MARKING--RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1519

STEP NO--UR/0016/70/000/003/0051/0054

CIRC ACCESSION NO--AP0106274

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--020CT70

2/2 025

CIRC ACCESSION NO--AP0106274

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS SUGGEST A SINGLE METHOD OF OBTAINING SENSITIZED HUMAN ERYTHROCYTES (I-O BLOOD GROUP), LOADED WITH O AND VI TYPHOID ANTIGENS. WHEN STORED IN A REFRIGERATOR THESE SENSITIZED ERYTHROCYTES RETAINED THEIR PROPERTIES FOR NOT LESS THAN 3 MONTHS. NINETY ONE PATIENTS SUFFERING FROM TYPHOID WERE EXAMINED IN THE COURSE OF THE DISEASE (217 SERA). THE DISEASE WAS CONFIRMED BY INDIRECT HEMAGGLUTINATION REACTION IN 73.6PERCENT AND VI AGGLUTININS WERE REVEALED IN 59.2PERCENT OF THE PATIENTS. THE GREATEST TITRES OF O ANTIBODIES WERE FOUND DURING THE 2ND WEEK OF THE DISEASE. THIS REACTION IN THE DESCRIBED MODIFICATION CAN BE USED, IN PRACTICAL LABORATORIES.

UNCLASSIFIED

GRABOVSKIY, I. I.

105- USSR

UDC 611--018.8 : 514519.95+519.92

COLEEN

GUTCHIN, I. B. and GRABOVSKIY, I. I.

SO: FOREIGN PRESS DIGEST
29 OCT 1991

"The Possibilities of Synthesizing Optimal Formal Neurons"

Kiberneticheskiye Aspekty v Izuchenii Raboty Mozga (Cybernetic Aspects of the Study of the Brain's Functioning), Moscow, Nauka Publishing House, 1970, pp 261-274

Abstract: Optimal neurons are understood to be formal neurons which have a minimum of fibers and at the same time a minimum of branches. Algorithms for synthesizing neurons with a minimum of fibers according to a given threshold diagram are known. The task of compiling a synthesis algorithm for a neuron with a minimum of branches is considered.

In the process of investigation it was established:

- 1) For a given threshold diagram, the number of neurons with a minimum of branches is substantially less than the number with a minimum of fibers;
- 2) For approximately $0.7 \div 0.9$ of the total number of threshold diagrams in question it is possible to construct one optimal formal neuron;

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29 Oct 71

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FFD:CYBERNETICS

USSR

GINTCHIN, I. B., GRABOVSKIY, I. I., Kiberneticheskiye Aspekty v Izucheni Raboty Mozga, Nauka Publishing House, 1970, pp 261-274

3) Depending on the technical means used to implement the neurons, the neuron net may be constructed wholly from optimal neurons or partially from neurons that are minimal with respect to one of the parameters (the number of branches or the number of the neurons).

2/2

GRABOVSKIY, P. P.

1/135 5-1875
2 922 73

- 76 -

METHODOLOGICAL PROCEDURES USED IN FRANCE FOR HEALTH STUDIES

(DOC: 614,146)

Article by P. P. Grabovskiy, E. Ya. Prikler, Department of Social Hygiene, Public Health Organization and History, Kiev Scientific Research Institute of General and Municipal Hygiene from A. N. Kurylov; Moscow, *Novel'skoye Zdravookhraneniye*, Russian, No 11, 1972, submitted 5 May 1972, pp 67-70]

Numerous foreign publications dealing with health statistics are diversified in content, in scope of issues considered, methods used, and theoretical sets. The diversity and increase in number of published works are indicative of development of health statistics in many countries of the world. But there are unique features in the health statistics of each country due to its history, socioeconomic, political factors, and status of public health service. This distinction pertains not only to the subject of the studies and results obtained, but also to the methods used.

No shall discuss the works of French authors, since methodological issues are given much attention in them. In the journal published by the National Institute of Health and Medical Research [1], there is a special section dealing with the methodological of statistical investigations. Works of a methodological nature are also published regularly in other journals [2], and significant space is given to the methods used in articles dealing with research results.

On the basis of studying the works of French authors, we can conclude that they do not describe technical procedures assuring accuracy of the investigation as such as they discuss the development of new methods, new approaches to investigation of phenomena in the area of public health, creation of new indices and concepts, i.e., they discuss the theoretical aspects of investigations dealing with health statistics.

One of the distinctions of the works in question is also the tendency to derive as many conclusions as possible per unit of observation. If this succeeded, it is not so much due to mathematical substantiation of the sample as to the originality of working hypotheses on which the study is based, the unique grouping and classification of phenomena. Let us discuss some of the most typical works of this kind. They include, first of all, those dealing with methods of evaluating the effectiveness of medical care rendered to the people.

USSR

UDC 538.4

VATAZHIN, A. B., GRABOVSKIY, V. I., Moscow

"Propagation of Unipolarly Charged Streams in Hydrodynamic Flows"

Moscow, Prikladnaya Matematika i Mekhanika, Vol 37, No 1, Jan-Feb. 1973, pp 57-64.

Abstract: The propagation of unipolarly charged streams in hydrodynamic flows is studied as applicable to problems of electrohydrodynamic flows beyond the mouth of a charged-particle source ("open" streams), in channels and in the pipes of electrohydrodynamic devices ("closed" streams). The basic dimensionless parameters are defined, on which the intensity of expansion of the stream depends. Numerical solution of the two-dimensional electrohydrodynamics equations is used to find the distributions of electrical parameters (charge density, electrical potential) in the stream and in the surrounding space.

Earlier works have studied flows in which the area of the hydrodynamic flow coincided with the area occupied by the charged component. This work clarifies the basic singularities of propagation of electric streams under various conditions. It is significant that in the analysis of these problems it is necessary to consider heterogeneity of the electric field both in the area of the charged stream and in the charge-free hydrodynamic flow and the surrounding space.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INITIATION DURING ETHYLENE POLYMERIZATION ON A CHROMIUM OXIDE
CATALYST -U-
AUTHOR--(04)-YERMAKOV, YU.I., ZAKHAROV, V.A., GRABOVSKIY, YU.P.,
KUSHNAREVA, E.G.
COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(2), 519-23

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHYLENE, POLYMERIZATION, CHROMIUM OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/1728

STEP NO--UR/0195/70/011/002/0519/0523

CIRC ACCESSION NO--AP0125349

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125349

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NOS. OF CENTERS OF GROWTH DURING CR OXIDE CATALYZED ETHYLENE POLYMN., (AT 25-75DEGREES-15-35 ATM ON SiO₂ OR AL SILICATE CATALYST SUPPORT) ARE COMPARED WITH THE CONTENT OF CR IN DIFFERENT VALENCE STATES. CR(VI) IS APPARENTLY THE ACTIVE COMPONENT OF THE CATALYST. INITIATION IS ACCOMPANIED BY REDN. OF CR; AND IN THE CENTER OF GROWTH, THE VALENCE OF CR IS LESS THAN OR EQUAL TO 3. FACILITY: INST. KATAL., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC 621.398

GRABOY, A. G., Engineer, ZHAMAGORTSYAN, K. M., Candidate of Technical Sciences

"Determining the Probability of Message Distortion for a Known Law of Distribution of Error Bursts in Communications Channels"

Moscow, Pribery i Sistemy Upravleniya, No 1, Jan 73, pp 9-12

Abstract: A general formula convenient for engineering calculations is derived for calculating the probability of distortion of a message comprised of n symbols in terms of the mathematical expectations of the length of an error burst and the length of an interval between bursts. The resultant formula is true for any communications channel for which the flow of error bursts may be considered an arbitrary flow of events with limited aftereffect. The formula shows satisfactory agreement with the actual distribution of interference in communications channels.

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USSR

UDC 629.78.015.076.6

GRABUN, V. Ya., FEDYUSHIN, B. K.

"Relativistic Generalization of the Equation of I. V. Meshcherskiy"

Vopr. Mekhaniki [Problems of Mechanics -- Collection of Works], Moscow University Press, 1971, pp 121-122, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 4, 1972, Abstract No 4.41.106 by T. A. Ye.).

Translation: A relativistic generalization of the equation of I. V. Meshcherskiy has been produced for analysis of the flight of an interstellar spacecraft:

$$m \frac{d\vec{V}}{dt} = \vec{F} + (\vec{U}_1 - \vec{V}) \frac{d\mu_1}{dt} - (\vec{U}_2 - \vec{V}) \frac{d\mu_2}{dt} - \vec{V} \frac{\vec{F} \cdot \vec{V}}{C^2},$$

where m is the mass of the spacecraft, μ_1 is the attached mass at moment t , μ_2 is the ejected mass at moment $t + dt$, \vec{V} is the velocity of the spacecraft, \vec{F} is the external force, \vec{U}_1 , \vec{U}_2 are the absolute velocities of the attached and ejected masses, C is the speed of light in a vacuum. This relativistic generalized equation becomes the generalized equation of I. V. Meshcherskiy in the classical case, and where $d\mu_1 = 0$ it becomes the relativistic equation

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USSR

UDC 629.78.015.076.6

GRABUN, V. Ya., FEDYUSHIN, B. K., Vopr. Mekhaniki, Moscow University Press, 1971, pp 121-122.

of I. V. Meshcherskiy. Based on the relativistic generalized equation of I. V. Meshcherskiy, a number of problems can be solved and studied concerning the flight of an interstellar spacecraft with a nuclear, direct-flow engine using interstellar hydrogen. 6 Biblio. Refs.

2/2

1/3 .010 6 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ISOTOPIC COMPOSITION OF CARBON IN NATURAL GASES NORTHERN WEST
SIBERIAN LOWLAND IN RELATION TO THEIR ORIGIN -U-
AUTHOR--(05)-YERMAKOV, V.I., LEBEDEV, V.S., NEMCHENKO, N.N., ROVENSKAYA,
A.S., GRACHEV, A.V.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. SSSR 1970, 190(3), 683-6 (GEOCHEM)

DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, EARTH SCIENCES AND
OCEANOGRAPHY
TOPIC TAGS--NATURAL GAS, CARBON, ISOTOPE, RADIOCARBON DATING, GEOLOGI
SURVEY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/0272

STEP NO--UR/0020/70/190/003/0683/0686

CIRC ACCESSION NO--AT0055068
UNCLASSIFIED

2/3 010

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0055068

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW NATURAL GAS PROVINCE, CONTG. RICH RESOURCES, WAS DISCOVERED RECENTLY IN THE NORTHERN PART OF WEST SIBERIAN LOWLAND. THE GAS DEPOSITS THERE ARE CONFINED TO THE CENOMANIAN STRATA FORMING AN UPPER PART OF THE POKURSK OILBEARING SERIES (APTIAN-ALBIAN-CENOMANIAN) WHICH CONSIST MOSTLY OF CONTINENTAL COASTAL MARINE FACIES. THE ISOTOPIC COMPN. OF C IN THESE GASES WAS DETD. AND COMPARED WITH THE PDB (THE CHICAGO STD. WITH PRIME12 C- PRIME13 C EQUALS 88.99PERCENT) TO DET. THE ORIGIN OF GAS IN THESE DEPOSITS. THE DEPOSITS OCCUPY A SPECIAL POSITION AMONG THE OTHER NATURAL GAS DEPOSITS OF YOUNG PLATFORMS, SITUATED IN MESOZOIC FORMATIONS, BEING MUCH RICHER IN PRIME12 C ISOTOPE (DELTA PRIME13 C FROM MINUS 5.83 TO MINUS 6.78PERCENT). E.G., THE GASES OF BUKHARA-KHIVA (TURANSK PLATFORM) HAVE DELTA PRIME13 C FROM MINUS 3.02 TO MINUS 3.82PERCENT AND GASES IN KRASNODAR DEPOSITS (SCYTHIAN PLATFORM) HAVE DELTA PRIME13 C VARYING FROM MINUS 3.76 TO MINUS 4.66PERCENT. THE DELTA PRIME13 C OF NORTHERN WEST SIBERIAN DEPOSITS IS VERY SIMILAR TO THAT OF THE MARSH GASES IN EUROPEAN PARTS OF THE U.S.S.R. WHERE IT VARIES FROM MINUS 5 TO MINUS 6.9PERCENT. THE DEGREE OF ORG. SUBSTANCE METAMORPHISM INDICATED THAT CONDITIONS OF GAS FORMATION IN NEW DEPOSITS WERE SIMILAR TO THE COALIFICATION IN APTIAN-ALBIAN-CENOMANIAN DEPOSITS AND TO GAS FORMATION IN RECENT MARSHES. THE MIGRATION OF GASES FROM DEPOSITS, UNDERLYING THE POKURSK SERIES, WAS EXCLUDED BY THE DATA ON ISOTOPIC COMPN. OF HYDROCARBON GASES OBTAINED DURING TESTING OF DEEP HORIZONS IN SOME OF THESE DEPOSITS (DELTA PRIME13 C FROM MINUS 3.85 TO MINUS 4.56PERCENT).

UNCLASSIFIED

3/2 010

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0055068

ABSTRACT/EXTRACT--THE SOURCE OF GASES, DURING FORMATION OF THESE GAS
DEPOSITS, WAS THE COAL SUBSTANCE SCATTERED IN THE ROCKS OF THE
APTIAN-ALBIAN-CENOMANIAN COMPLEX.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--REPRODUCTION OF BLACK AND WHITE ORIGINALS IN THE BOOK JOURNAL
INDUSTRY -U-
AUTHOR--(02)-GRACHEV, A.V., VINOGRADOVA, D.P.
COUNTRY OF INFO--USSR
SOURCE--PELIGRAFIYA 1970, 1 23-6
DATE PUBLISHED-----70

SUBJECT AREAS--METHODS AND EQUIPMENT
TOPIC TAGS--PHOTOGRAPHIC IMAGE, PHOTOGRAPHIC MATERIAL

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY RELL/FRAME--3006/0654 STEP NO--UR/0543/70/001/000/0023/0026
CIRC ACCESSION NO--AP010016
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134416

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REQUIREMENTS OF BLACK AND WHITE ORIGINALS AND THEIR CLASSIFICATION (PHOTOGRAPHIC ORIGINALS, DRAWINGS, ETC.) ARE DISCUSSED. THE DEPENDENCE OF THE REPRODUCTION QUALITY ON THE TYPE OF SURFACE OF THE PHOTOGRAPHIC PAPER WAS STUDIED AND THE RESULTS ARE TABULATED. THE MAX. DS. ACHIEVED FOR IS GRAPHIC AND COLOR MATERIALS ARE TABULATED. ANILINE DYES GAVE THE HIGHEST DS. (2.1-2.3) AND GLOSSY PAPER ENABLED OPTICAL DS. OF 1.8-2.0 FOR SHADOWED PORTIONS OF THE IMAGE TO BE OBTAINED.

UNCLASSIFIED

USSR

UDC: 621.3.083.088:622.233.4/.7

GRACHEV, B. A. and RYBAKOV, V. V.

"Determining the Effective Noise Voltage in an Electrical Wireless Communication Channel"

Moscow, Izmeritel'naya tekhnika, No 3, 1972, pp 54-56

Abstract: A device is proposed for determining the noise in telemetered signals for controlling drilling equipment and procedures. The drilling equipment consists of a column of drilling tubes surrounded by laving liquid and rock. The choice of basic parameters for the system, such as the type of modulation, the frequency range of the signal, the transmitted power level, and the receiver sensitivity, is a function of the noise developed in the communication channel. The method and device were the products of the Special Planning and Design Office of the Groznyy Neftegazprom-avtomatika; samples of the noise are obtained on magnetic tape and are then processed manually or automatically under laboratory conditions. The present article describes the technique for finding the effective noise distribution from the samples as well as the equipment. The method of computing the integral and differential noise distribution functions is left for a separate article.

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USSR

UDC 621.355.8.035.2

GRACHEV, D. K., and L'VOVA, L. A.

"Investigation of the Impedance of a Cadmium Electrode in Solutions of Potassium Hydroxide in the Region of Potentials of the Passive State"

V sb. Issled. v obl. khim. istochnikov toka (Research in the Field of Chemical Sources of Current -- collection of works), vyp 2, Saratov, un-t, 1971, pp 32-42 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18L180)

Translation: The paper deals with the results of measurements of the impedance of a cadmium electrode in KOH solutions (0.1, 0.5, 1 and 5 n.) in the region of potentials from -0.870 to +1.0 V (with respect to a mercuric oxide electrode) at 20, 40, 60 and 80°C. It is found that anode polarization of the electrode strongly reduces the capacitance of the boundary between the electrode and the KOH solution. Passivation of the electrode, accompanied by a simultaneous drop in capacitance, is due to the formation of specific passivating layers which arise at the instant of retardation of the process of anodization of the cadmium. An analysis is made of the relation between impedances of the Warburg and Young types. V. S. Levinson.

1/1

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008 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--DETERMINATION OF THE DIFFUSION COEFFICIENT IN POROUS CATALYSTS BY A
DELAY TIME TECHNIQUE IN THE ABSENCE OF PRESSURE DROP -U-
AUTHOR--(03)-GRACHEV, G.A., IONE, K.G., BAPSHEV, A.A.
COUNTRY OF INFO--USSR
SOURCE--KINET. KATAL. 1970, 11(2), 541-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DIFFUSION COEFFICIENT, CATALYST
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0882 STEP NO--UR/0195/70/011/002/0541/0543
CIRC ACCESSION NO--AP0137910
UNCLASSIFIED

2/2 008
CIRC ACCESSION NO--AP0137910

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DESCRIBED FOR DETN. OF
DIFFUSION COEFF. (D) IN STATIONARY AS WELL AS IN NONSTATIONARY SYSTEMS
BY MEASURING COUNTER DIFFUSIONAL FLOWS IN A CATALYST TABLET. THE METHOD
INVOLVES THE CONVENTIONAL TIME DELAY TECHNIQUE AND THE THEORIES OF WICKE
HOLLENCACN (1941) AND TIMOFEEV (1962). FACILITY: INST. KATAL.,
NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC: 621.373.531.1(088.8)

BATYRSHIN, D. M., GLADCHENKO, V. N., GRACHEV, G. F., OPESKIN, V. D.,
PANKOV, S. V.

"A Royer Generator"

USSR Author's Certificate No 267678, filed 15 Jun 68, published 5 Aug 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G232 P)

Translation: This Author's Certificate introduces a Royer generator with provision for controlling the frequency of the generated pulses over a broad range. The transformer windings connected to the collectors of the transistors are shunted by a variable resistor.

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1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ROTARY RING FURNACE PREPARATION OF LUMP SMOKELESS HOUSEHOLD FUEL 4
FROM CENTRAL ASIAN COALS -U-
AUTHOR--GRACHEV, G.J., ZAGORETS, A.M., MAKAROV, G.N., PEREVEZENTSEV, A.V.,
SYSKOV, K.I.
COUNTRY OF INFO--USSR G
SOURCE--KHIM. TVERD. TOPL. 1970, (1), 78-85
DATE PUBLISHED-----70

SUBJECT AREAS--PROPULSION AND FUELS
TOPIC TAGS--COAL, PYROLYSIS, SOLID FUEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY PEEL/FRAE--1990/2033

STEP NO--UR/0467/70/000/001/0073/0035

CIRC ACCESSION NO--AP0109965
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UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109965

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE TITLE FUEL WAS PREPD. BY GRANULATION AND THERMAL TREATMENT OF MIXTS. OF 55-65 PARTS OF CENTRAL ASIAN NON CAKING COALS WITH 25-35PARTS OF SIFTINGS OF KAPAGANDA COALS. THE MIXTS. ARE INTRODUCED INTO A ROTARY RING FURNACE AT 750DEGREES AND SLOWLY HEATED TO 1050DEGREES WHILE THE HEARTH REMAINED AT 540DEGREES. WITH THE TITLE FUEL THE EFFICIENCY OF HOUSEHOLD OVENS REACHED 80PERCENT WHILE WITH SIMILAR BRIQUETS NOT THERMALLY TREATED THE COEFF. WAS SMALLER THAN 65PERCENT.

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1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70
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FROM CENTRAL ASIAN COALS -U-
AUTHOR--GRACHEV, G.I., ZAGORETS, A.M., MAKAROV, G.N., PEREVEZENTSEV, A.V.,
SYSKOV, K.I.
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STEP NO--UR/0467/70/000/001/0073/0085

CIRC ACCESSION NO--AP0109965

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PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109965

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE FUEL WAS PREPD. BY GRANULATION AND THERMAL TREATMENT OF MIXTS. OF 55-65 PARTS OF CENTRAL ASIAN NON CAKING COALS WITH 25-35PARTS OF SIFTINGS OF KARAGANDA COALS. THE MIXTS. ARE INTRODUCED INTO A ROTARY RING FURNACE AT 750DEGREES AND SLOWLY HEATED TO 1050DEGREES WHILE THE HEARTH REMAINED AT 540DEGREES. WITH THE TITLE FUEL THE EFFICIENCY OF HOUSEHOLD OVENS REACHED 80PERCENT WHILE WITH SIMILAR BRIQUETS NOT THERMALLY TREATED THE COEFF. WAS SMALLER THAN 65PERCENT.

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UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--AN ION EXCHANGER -U-

AUTHOR--(05)-ILIN, V.A., SAMBORSKIY, I.V., GRACHEV, L.L., PASHKOV, A.B.,
DOMNINA, L.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 231,800
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ION EXCHANGE RESIN, CHEMICAL PATENT, POLYCONDENSATION,
POLYETHYLENE, POLYAMINE, RESORCINOL, HEXAMETHYLENETETRAMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1442

STEP NO--Ur/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0123841

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AA0128841
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ION EXCHANGER WITH GREATER
CAPACITY FOR MOLYBDATE AND TUNGSTATE IONS IS PREPD. BY POLYCONDENSATION
OF POLYETHYLENE POLYAMINE, RESORCINOL, AND HEXAMETHYLENETETRAMINE.

UNCLASSIFIED

1/2 012
TITLE--ICN EXCHANGER -U-

UNCLASSIFIED

PROCESSING DATE--30OCT70

AUTHOR--(05)--ILIN, V.A., SAMBORSKIY, I.V., GRACHEV, L.L., PASHKOV, A.B.,
DOMNINA, L.A.
CCOUNTRY OF INFO--USSR

SOURCE--USSR 231,799
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ICN EXCHANGE RESIN, CHEMICAL PATENT, TUNGSTATE, MOLYBDATE,
POLYETHYLENE, POLYAMINE, RESORCINOL, FORMALDEHYDE, ORGANIC SULFUR
COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1455

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128854

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NU--AA0128854

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ION EXCHANGER WITH IMPROVED
CAPACITY FOR MOLYBDATE AND TUNGSTATE IONS IS PREPD. BY POLYCONDENSATION
OF POLYETHYLENE POLYAMINES, RESORCINOL AND HCHO, AND CONTAINS
TETRAMETHYLTHIURAM DISULFIDE.

UNCLASSIFIED

USSR

UDC 546.78:620.172.2

CHUBAROV, V. M., LEVINSKIY, YU. V., SALIBEKOV, S. YE., TREFILOV, A. F., GRACHEV, L. V., RODIN, YE. M., LEVINSKAYA, M. KH., DVOYCHENKOVA, L. V., Moscow

"Heat-Resistant Composition Material Based on Nickel"

Kiev, Problemy Prochnosti, No 7, 1971, pp 100-104

Abstract: Results are presented from development of the VKM-1 composition material constructed on the basis of the heat-resistant ZhS6-K nickel alloy reinforced with tungsten wire. Data are presented from metallographic and micro-radiographic studies of the compatibility of the matrix with the fiber indicating insignificant interaction of the ZhS6-K alloy with the tungsten even after holding for 100 hours at a temperature of 1,200° C.

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UNCLASSIFIED

PROCESSING DATE--23OCT70

1/2 011
TITLE--THE REACTION OF N, CYCLOHEXYL, N', BETA, (4, METHYLMORPHOLINIUM)
ETHYLCARBODIIMIDE WITH GUANYLYL (3' TO 5') CYTIDINE -U-
AUTHOR-(04)-GIRSHOVICH, A.S., GRACHEV, M.A., KNORRE, D.G., CHINITOVA, T.A.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR, NO 2, SERIYA
KHIMICHESKIKH NAUK, 1970, NR 1, PP 97-102
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GUANIDINE, IMIDE, MORPHOLINE, HETEROCYCLIC NITROGEN COMPOUND,
REACTION KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REFL/FRAME--1984/1601

STEP NO--UR/0299/70/000/000/0097/0102

CIRC ACCESSION NO--AP0100211

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0100211

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION KINETICS HAS BEEN STUDIED OF GUANOSINE RESIDUE IN GPC WITH CME CARBODIIMIDE, AND THE TEMPERATURE DEPENDENCE OF THE IONISATION OF THE SAME RESIDUE IN ALKALINE MEDIUM DETERMINED. THE REACTIVITY OF GUANOSINE RESIDUE TO GPC DOES NOT DIFFER CONSIDERABLY FROM THAT OF FREE GUANOSINE.

UNCLASSIFIED

1/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--CHEMICAL MODIFICATION OF GUANOSINE AND INOSINE WITH N-CYCLOHEXYL,N
PRIME,8E,4,METHYLMORPHOLINIUM, ETHYLCARBODIIMIDE -U-
AUTHOR--(04)-GIRSHOVICH, A.S., GRACHEV, M.A., DRESHKOVA, S.F., RIVKIN, M.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. SIB. OTD. AKAD. NAUK SSSR, SER. KHIM. NAUK 1970, (1), 90-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NUCLEOSIDE, CHEMICAL REACTION, UV SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0542

STEP NO--UR/0289/70/000/001/0090/0097

CIRC ACCESSION NO--AP0137631

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137631

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF N,CYCLOHEXYL,N PRIME,(BETA,(4,METHYLMORPHOLINYL)ETHYL)CARBODIIMIDE (I) AS THE P-MEC SUB6 H SUB4 SO SUB3 H SALT WITH GUANOSINE (II) AND INOSINE (III) WAS FOLLOWED BY USING LABELED I. A SOLN. OF 29.6 MG I SALT, 10 MG II IN 15 ML H SUB2 O SUB 0.1N KOH TO PH 8.4 WAS KEPT 24 HR AT 37DEGREES. THE REACTION OF I WITH III WAS PERFORMED SIMILARLY. KINETICS OF THE CONDENSATIONS, FOLLOWED BY UV SPECTRA, WAS FIRST ORDER IN BOTH COMPONENTS. THE CONDENSATION PRODUCT OF I WITH II (PK 3.8) AND OF I WITH III (PK 3.5, H SUB2 O, 23DEGREES) ARE STABLE BETWEEN PH 2 AND 7. IN AN ALK. SOLN., HYDROLYSIS OCCURS. THE CORRESPONDING ARRHENIUS EQUATION PARAMETERS WERE DETD. FACILITY: NOVOSIBIRSK. INST. ORG. KHIM., NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70 -
TITLE--THE CHEMICAL MODIFICATION OF GUANOSINE AND INOSINE WITH
N,CYCLOHEXYL, N', BETA, (4,METHYLMORPHOLINIUM) ETHYLCARBODIIMIDE --U--
AUTHOR--(04)-GIRSHOVICH, A.S., GRACHEV, M.A., ORESHKOVA, S.F., RIVKIN, M.I.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSR, NO 2, SERIYA
KHIMICHESKIKH NAUK, 1970, NR 1, PP 90-97
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NUCLEOSIDE, IMIDE, CYCLIC GROUP, MORPHOLINE, CHEMICAL KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1984/1825

STEP NO--UR/0289/70/000/001/0090/0097

CIRC ACCESSION NO--AP0100399

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100399

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICAL STUDIES HAS BEEN PERFORMED AND THE ARRHENIUS EQUATION PARAMETERS FOUND FOR THE REACTION OF GUANOSINE AND INOSINE WITH CME CARBODIIMIDE IN AN AQUEOUS SOLUTION. THE REACTION PRODUCTS (CME, NUCLEOSIDES) ARE STABLE IN NEUTRAL AND ACIDIC MEDIA DOWN TO PH 1. THEY CONTAIN GROUPINGS WITH PK 3,8 (CME, GUANOSINE) AND 3,5 (CME INOSINE) AT 23DEGREES. THE REACTION KINETICS HAS BEEN ALSO STUDIED OF THE HYDROLYSIS OF CME, NEUCLEOSIDES TO THE STARTING NUCLEOSIDES IN ALKALINE MEDIUM AND THE CORRESPONDING ARRHENIUS EQUATION PARAMETERS DETERMINED.

UNCLASSIFIED

Acc. Nr:

AP0044691

G

Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1,
pp 45-50

THE CHEMICAL MODIFICATION OF GUANYLYL-(3'→5')-CYTIDINE
WITH N-CYCLOHEXYL, N'-β-(4-METHYLMORPHOLINIUM)-
ETHYLCARBODIIMIDE.

THE EFFECT OF THE MODIFICATION UPON THE STABILITY
OF PHOSPHODIESTER BOND TO GUANYLO-RIBONUCLEASE
OF ACTINOMYCES

A. S. GIRSHOVICH, M. A. GRACHEV and T. A. CHIMITOVA

Institute of Organic Chemistry, Siberian Branch of the Academy of Sciences, USSR,
Novosibirsk

Guanylyl-(3'→5')-cytidine has been modified with ¹⁴C-CME-carbodiimide at the
guanosine residue and the reaction product $\bar{G}pC$ was isolated. Guanylo-ribonuclease from
Actinomyces does not cleave the phosphodiester bond in $\bar{G}pC$.

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USSR

UDC 621.384.664

GALYAYEV, N. A., GOLOVINA, N. I., GRACHEV, M. I., GRIDASOV, V. I., GUBRIYENKO, K. I., YEREMENKO, Ye. V., ZAPOL'SKIY, V. N., ZELENOV, B. A., KOTOV, V. I., KUZNETSOV, V. S., MERKER, E. A., MYZNIKOV, K. P., PUCHUGIN, V. A., PRILEPIN, A. A., SELEZNEV, V. S., SEREBRYAKOV, B. A., KHODYREV, Yu. S., and CHEPEGIN, V. N.

"Proton Beam With an Impulse of Up to 70 GeV/s Elastically Dispersed Inside a Target"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 7, 1972, pp 1437-1445

Abstract: This paper discusses the operation of a channel built into the French liquid-hydrogen Mirabelle chamber for the accelerator of the Institute of High-Energy Physics (IFVE). The function of the channel is to form pure beams of π and k mesons, and antiprotons, in a broad range of impulse magnitudes under the action of a high-frequency separator. The secondary particles are generated on the inside of a target placed in the path of a proton beam diverted from the accelerator with an energy of 70 GeV. By using a fast system for aiming the proton beam at the target, together with a kicker magnet in the channel, the required number of particles passing through the chamber can be provided. The optical system of the channel is described with the

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GALYAYEV, N. A., et al., Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 7, 1972, pp 1437-1445

aid of diagrams of two possible variants; the beam aiming system and the particle dosage for the bubble chamber are also explained. The authors thank R. M. Sulyayev, P. F. Yermolov, A. M. Moiseyev, M. I. Solov'yev, I. A. Danil'chenko, Ye. A. Parshin, V. M. Kolesnik, A. N. Alejev, V. D. Rudko, and V. M. Gorshkov for their assistance.

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USSR

UDC: 518.9

GRACHEV, N. I., YEVTUSHENKO, Yu. G.

"Some Properties of Minimax Problems"

V sb. Issled. operatsiy. vyp. 2 (Operations Research--collection of works. No 2), Moscow, 1971, pp 28-41 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V766)

Translation: The authors pose the problem of finding the minimax $I_1 = \min_{y \in Y} \max_{x \in X} K(x, y)$ (X and Y are subsets of Euclidean spaces E_m and E_n). The

solution of this problem is the function $\tilde{x}(y)$ which satisfies the equality $K(\tilde{x}(y), y) = \max_{x \in X} K(x, y)$ and the set NCY , where $K(\tilde{x}(y_*), y_*) = \min_{y \in Y} K(\tilde{x}(y), y)$ for points

y_* of set N . For $X=[a, b]$, $Y=[c, d]$ a reduction of the problem is made, i. e. the solution is sought among the functions which satisfy the equation $(x(y)-a)(x(y)-b)K_x(x(y), y)=0$ and the inequality $(x(y)-a)^2(x(y)-b)^2K_{xx}(x(y), y) \leq 0$. The functions $\tilde{x}(y)$, $K(\tilde{x}(y), y)$ and others are studied. A "local minimax" is defined and its sufficient conditions are formulated. Some results are generalized to the case where X and Y are n -dimensional parallelepipeds. L. Bregman.

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USSR/Mil/KU

The following are identified as authors of articles in the journals indicated:

GRACHEV, S., Maj Gen, Za rulem
of DOSAAF, Deputy Chairman of the Central Committee

DEMIN, N. S., Lt Gen, Radio
Chairman of the Central Committee of DOSAAF of the USSR, Hero of the Soviet Union, First Deputy

REBROV, M., Engr-Lt Col, Kryl'ya Rodiny
NALIVAYKO, B., Maj,
KATRICH, A., Col Gen Avn, Hero of the Soviet Union, Commander of
Aviation of GSEF, Honored Military Pilot of the USSR,
MAMAYEV, A., Col.

Sovetskiy Patriot, 24 Dec 72, p 4, col 7

(6)

USSR

UDC 615.31, [547.94+546.22].014.45

GRACHEV, S. A., CHAKCHIR, B. A., and RYABYKH, L. D., Military Medical Academy imeni S. M. Kirov, Institute of Nuclear Physics, Academy of Sciences USSR, Leningrad

"Study of the Feasibility of Radiation Sterilization of Pharmaceutical Preparations of Some Alkaloids and Sulfur Containing Substances"

Leningrad, Khimiko-Farmatsevticheskiy Zhurnal, Vol 7, No 5, May 73, pp 47-50

Abstract: The feasibility of radiation sterilization was studied on ephedrine hydrochloride, atropine sulfate, scopolamine hydrobromide, strychnine nitrate, morphine hydrochloride, codeine phosphate, proserine, cysteamine hydrochloride, and unithiol in form of injectable solutions and as powders. It was shown that the sterilizing dose of radioactivity results in a breakdown of the solutions as shown by changes in the pH, color and loss of biological activity. Alkaloid powders exhibited no changes after radiation sterilization. Deaerated solutions were also stable to the radiation but such solutions could not be prepared easily under industrial conditions. Temperature had no effect on the stability of test samples except for very low temperatures.

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USSR

UDC 541.15:615.784

CHAKCHIR, B. A., GRACHEV, S. A., RYABIKH, L. D., Military Medicine Order of Lenin Red Banner Academy Imeni S. M. Kirov, Leningrad Institute of Nuclear Physics, Acad. Sc., USSR

"Radiolysis of Tropane Alkaloids in Aqueous Solutions"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 3, 1972, p 401

Abstract: Yields of the decomposition products obtained from irradiation of alkaloids do not depend on the concentration of the irradiated solution. Increasing the dose of radioactivity leads to a lower yield. The breakdown products obtained from the irradiation of alkaloids show no biological activity. Tropine and tropic acid were identified among the products obtained from irradiated atropine.

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- 8 -

GRACHEV, S. V.

INFLUENCE OF PLASTIC DEFORMATION ON THE RELAXATION OF STRESSES IN BERYLLIUM BRONZE

UDC 669.351.725

Article by S. V. Grachev and E. B. Azhizhen, Ural Polytechnic Institute, Department of Metal Research; Ordzhonikidze, Izvestiya VUZ, Tsvetnaya Metallurgiya, Russian, No 6, 1971, signed to press 28 March 1971, pp 135-138

Beryllium bronze is finding broad application in instrument design for the manufacture of different types of springs and elastic elements [1]. Resistance to stress relaxation has great significance in the number of requirements imposed on spring products of beryllium bronze.

References [2, 3] investigated the phenomenon of anomalous relaxation of beryllium bronze, including the fact that stresses created by the external loading of a sample (in bending) are reduced to zero value and then grow with an inverse sign and subsequent ordinary relaxation of the already redistributed stress. The anomalous relaxation of stresses was observed only under test conditions when the alloy had a metastable structure (quenched or slightly aged).

In connection with the significant spread of the operation of cold plastic deformation after quenching for beryllium bronze it is of interest to investigate the influence of cold plastic deformation on the kinetics of stress relaxation. Earlier it was shown [4] that cold plastic deformation of quenched beryllium bronze is a significant decrease eliminates the anomalous kinetics of stress relaxation; however, no detailed investigation of this question has been conducted.

In particular it is of interest to study the influence of plastic deformation not only on the anomalous, but also on the ordinary, relaxation of stresses in connection with stress relaxation after quenching and aging.

UDC 558.80

4 May 72

GRACHEV, S. V.

INFLUENCE OF PLASTIC DEFORMATION ON THE RELAXATION OF STRESSES IN BERYLLIUM BRONZE

Article by S. V. Grachev and E. B. Adzhizhan, Ural Polytechnic Institute, Department of Metal Research, Ordzhonikidze, Izvestiya VUZ, Tsvetnaya Metallurgiya, Kuznets, No 6, 1971, signed to press 28 March 1971, pp 135-138

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4/11/77
UDC 649.35.725

Beryllium bronze is finding broad application in instrument design for the manufacture of different types of springs and elastic elements [1]. Resistance to stress relaxation has great significance in the number of requirements imposed on spring products of beryllium bronze.

References [2, 3] investigated the phenomenon of anomalous relaxation of beryllium bronze, including the fact that stresses created by the external loading of a sample (by bending) are reduced to zero value and then grow with an inverse sign and subsequent ordinary relaxation of the already redistributed stress. The anomalous relaxation of stresses was observed only under test conditions when the alloy had a metastable structure (quenched or slightly aged).

In connection with the significant spread of the operation of cold plastic deformation after quenching for beryllium bronze it is of interest to investigate the influence of cold plastic deformation on the kinetics of stress relaxation. Earlier it was shown [4] that cold plastic deformation of quenched beryllium bronze to a significant degree eliminates the anomalous kinetics of stress relaxation; however, no detailed investigation of this question has been conducted.

In particular it is of interest to study the influence of plastic deformation not only on the anomalous, but also on the ordinary, relaxation of stresses in conjunction with stress relaxation after quenching and aging.

USSR

UDC 539.374

GRACHEV, S. V., and CHERVINSKIY, V. F., Ural Polytechnical Institute imeni
~~S. M. Kirov~~

"Internal Friction in Martensite-Aging Steels"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 4, Oct 70, pp
851-856

Abstract: An investigation was made of the temperature dependence of the internal friction of martensite-aging steels. The height of the peaks of internal friction sharply decreased at relatively low tempering temperatures (100-200°). In the case of tempering above 200° for a period of 1 hr there were practically no peaks on the temperature-internal friction curves. A considerable shift of the high-temperature curve of internal friction toward higher temperatures was observed, a fact which attests to the increased stability of the structure. During tempering at 650° and above, when a considerable quantity of untempered martensite appeared in the structure of alloys, characteristic peaks of internal friction, especially peaks A and B were observed on the curve of internal friction. The correlation between the internal friction and other properties, on the one hand, and 1/2

USSR

GRACHEV, S. V., and CHERVINSKIY, V. F., Fizika Metallov i Metallovedeniye, Vol 30, No 4, Oct 70, pp 851-856

data of X-ray phase analysis, on the other, substantiates the previous position that in the studied alloys the processes of recovery are related not so much to the processes of over-aging of iron-nickel martensite as to the formation of a stabilized austenite in the structure.

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AA0040692- GRACHEV S.V. UR 0482

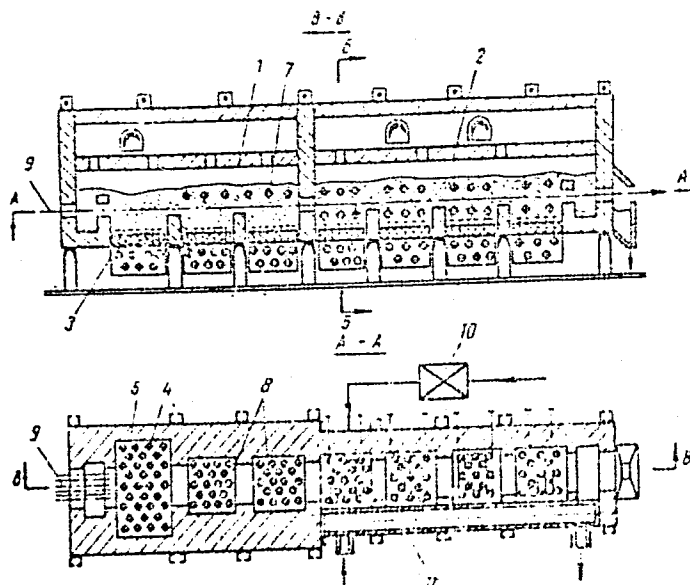
Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

240728 COMPARTMENT FURNACE intensifies the heat treatment operation in that each section of its gas distributor grid has independent headers to activate part of its lids or caps. The bottoms of the heating (1) and cooling (2) compartments comprise the grid sections (3) to support crushed corundum, firebrick etc, the first section grid (6) rather wider than those following so that the gas can burn well below the level of the wire passing through and provide enough heat to raise the metal to scale temperatures. The gas (short of air) burns and forms a de-oxidising medium, with additional air piped in (7) to finally burn off the gas above the wire level. When working small gauge wire, air preheated in the stove (10) is fed in through the grid caps. When working average gauge material, heat can be removed by the air cooling tube (11), whilst at heavy gauges a water-cooling tube can be inserted.

15.12.66 as 1120453/22-1.GUTOVSKII.B.P.et al(14.6.69)
Bul 13/1.4.69. Class 18c, 31a¹. Int.Cl.C21d, F27b.

19750310

AA0040692



19750311

AA0040692

AUTHORS: Gutovskiy, B. P.; Orlov, N. A.; Berdichevskiy, A. M.;
Baskakov, A. P.; Zubov, V. Ya.; Grachev, S. V.;
Berg, B. V.; Zavarov, A. S.; Burkov, G. G.;
Krasil'nikov, L. A.; and Sokolov, N. V.

19750312

$\frac{2}{3}$

AA0040740-

Grachev, N. A.

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

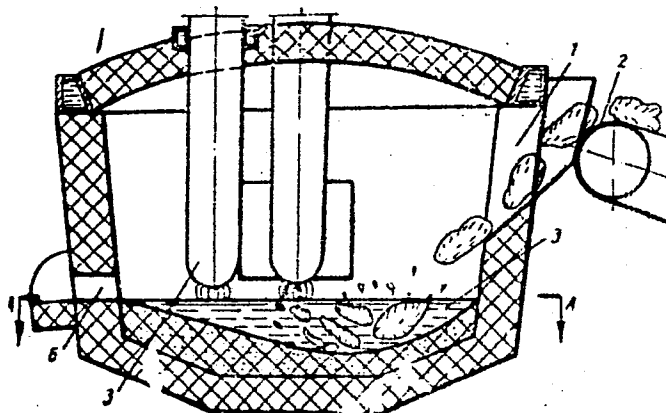
1-70

242325 ARC IRONMAKING FURNACE hearth is asymmetric-
ally convex so that it expands towards the
charging window and narrows towards the notch,
whilst the electrodes lie in the narrow portion to
provide continuous iron making. The charge is fed
in continuously into the bath (3) of molten metal
and the charged lumps draw heat from the metal
which has been produced by the arc between this and
the electrodes (4). The position of the notch (6)
ensures that the bath meniscus remains at a constant
level. Surplus flows out thus to a teeming arrange-
ment for re-pouring into cast product. Slag also
runs off continuously thus keeping the bath clean
and receptive to the heat from the arc. The
hottest metal flows off continuously, some of it
is turbulised near the periphery and returned to
the bath to melt the slag component.

19.5.67 as 1157178/22-2. CHERNYI, A. A. et al. PENZA
COMPRESSOR WORKS. (2.9.69) Bul 15/25.4.69. Class
31a¹. Int.Cl.F 27 b.

19750406

AA0040740



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AA0040740

AUTHORS: Chernyy, A. A.; Grachev, V. A.; Mariembakh, L. M.; Ivanov,
D. P.; Kurbatskiy, I. L.; Sosnovskiy, Ye. D.; and Pavlenko,
N. S.

Penzenskiy Kompessornyy Zavod

19750408

3/13

AA0040704

GRACHEV V.A.

UR 0482

1-70

Soviet Inventions Illustrated, Section I Chemical, Derwent,

240946 IRON SMELTING IN A GAS-FIRED CUPOLA blows it with previously thermally cracked hydrocarbons during melting so as to promote assimilation by the iron of the carbon involved. This gas is thermally cracked by passing it round in conduits let into the cupola lining and thus emerges as a heated mix of carbon black and gaseous hydrogen. This is suitable for continuous carburising of the iron in the cupola. 1.2.66 as 1052704/22-2. GRACHEV.V.A.et al.(19.8.69) Bul 13/1.4.69. Class 31a. Int.Cl.B 22b.

LD

AUTHORS: Grachev, V. A.; Chernyy, A. A.; Mariyenbakh, L. M.; and Kurbatskiy, I. L.

19750335

USSR

UDC 677.494.72

SLATINA, S. D., KIRILENKO, Yu. K., VOL'F, L. A., MEOS, A. I., KLIMENKO, I. B., GRACHEV, V. I., VISHNYAKOVA, T. P., and VLASOVA, I. D., Leningrad Institute of the Textile and Light Industries imeni S. M. Kirov, and Moscow Institute of the Petrochemical and Gas Industries imeni I. M. Gubkin

"Polyvinyl Fabrics Modified With Ferrocene-Containing Compounds"

Leningrad, Zhurnal Prikladnoy Khimii, Vol XLV, No 2, Feb 1972, pp 446-447

Abstract: Heteroorganic compounds are already widely used as modifiers of chemical fibers, and specific methods are known for imparting desired properties to fibers by the use of silicon- and boron-containing compounds. However, the use of ferrocene-containing compounds in this way has not been described, although these compounds impart a number of valuable properties to polymers, notably resistance to heat and radiation. Ferrocene-containing compounds are of further interest in having possible biological effects, including an effect on blood-formation. Polyvinyl alcohol (PVA) fiber was treated with 1,1-diacylferrocene-formaldehyde (DAFF) resin, obtained by condensation polymerization with formaldehyde in the presence of Na_2CO_3 in ethanol. The freshly formed fiber was submerged for 1-5 minutes in 5-20% solutions of the resin, then heated at 140-180° for 10-20 minutes.

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SLATINA, S. D., Zhurnal Prikladnoy Khimii, Vol XLV, No 2, Feb 1972, pp 446-447

The fiber became resistant to the effect of hot water. Apparently, in the fiber-resin reaction there was condensation of the PVA hydroxyl groups with the resin methyl groups, so that simple ester bonds were formed between the two polymers; this was confirmed by comparison of the number of hydroxyl groups in the initial fiber, the resin-processed fiber, and the heated resin, and also by infrared data. Graphic data accompany the paper.

2/2

1/2 025 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--INFRARED SPECTROSCOPIC STUDY OF DEHYDROCHLORINATED POLY(VINYL
CHLORIDE) FIBERS AND FILMS AND THEIR MODIFICATIONS -U-
AUTHOR--(05)-GRACHEV, V.I., BEZPRUZYANNYKH, A.V., SHELKUNOV, N.G.,
KILHENKO, I.B., KIRILENKO, YU.K.
COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3) 633-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--IR SPECTRUM, POLYVINYL CHLORIDE FIBER, TEMPERATURE DEPENDENCE,
CATALYST ACTIVITY, CHLORINATION, DEHYDROGENATION, BROMINATION, THIOUREA,
POLYMER FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1992/0305

STEP NO--UR/0080/70/043/003/0633/0638

CIRC ACCESSION NO--AP0111499

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2/2 025

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111499

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF MEDIUM, CATALYST, AND TEMP. OF DEHYDROCHLORINATION OF POLY(VINYL CHLORIDE) FIBERS AND FILMS ON THEIR IR SPECTRA WAS STUDIED. DEHYDROCHLORINATION INCREASES WITH TEMP. (110-150DEGRRES) AND TIME AS SHOWN BY INCREASED INTENSITY OF THE BANDS AT 1680-1720 AND 1605 CM PRIME NEGATIVE1 (UNSATD. C-C AND C-C BONDS). THE BAND INTENSITY AT 3028 CM PRIME NEGATIVE1 (END VINYL GROUPS) ALSO INCREASES WITH TEMP. THE PRESENCE OF A CATALYST INCREASES THE RATE, DIAZAMINOBENZENE INCREASING THE RATE MORE THAN ALPHA,NAPHTHYLAMINE. USING DIAZAMINOBENZENE, ALPHA AND BETA UNSUBSTITUTED ALDEHYDE GROUPS ARE FORMED (ABSORPTION AT 1690 CM PRIME NEGATIVE1). DEHYDROCHLORINATION PROCEEDS MORE RAPIDLY IN AIR THAN IN VACUUM. ALSO, THE TREATED PRODUCT WAS BROMINATED WITH 3PERCENT AQ. BR AT 80DEGREES FOR 2 HR TO GIVE BRCHCH:CHCHBR GROUPS. SUBSEQUENT TREATMENT WITH THIOUPEA AT 100-2DEGREES SHOWS THE PRESENCE OF THIOAMIDE AND THIOURONIUM GROUPS, WHICH ARE REMOVED BY TREATMENT WITH 2N NAOH, IN THE SPECTRUM.

UNCLASSIFIED

USSR

UDC 621.315.592

NASHEL'SKIY, YA.M., GRACHEV, V.M.

"New Preparation Of Decomposing Semiconductor Compounds"

V sb. Elektronika i yeye primeneniye (Electronics And Its Applications--Collection Of Works), Moscow, Izd-vo VINITI, 1971, pp 247-265

Abstract: The paper describes methods and apparatus for preparation of the so-called decomposing semiconductor compounds and their solid solutions, to which the widely known compounds of Type $A^{III}B^V$ and $A^{II}B^{VI}$, silicon carbide and also numerous triple semiconductor phases (compounds and solid solutions) are related. A detailed scheme is presented of a high-pressure apparatus for synthesis and growth of single crystals of cadmium sulfide and zinc. The design is shown of: (1) A high-pressure device for growth of gallium phosphide crystals by the horizontal zone melting method; and (2) A high-pressure device for growth of gallium phosphide crystals by the Czochralski method from under a layer of covering flux. 4 fig. 54 ref.

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- 65 -

1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF THE MECHANISM OF DENDRITIC GROWTH ON IMPURITY
HETEROGENEITY IN GALLIUM PHOSPHIDE CRYSTALS -U-
AUTHOR-(02)-GRACHEV, V.N., KARINA, L.I.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 392-3

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GALLIUM COMPOUND, PHOSPHIDE, CRYSTAL GROWTH,
ELECTROLUMINESCENCE, CRYSTAL IMPURITY, ETCHED CRYSTAL

CENTRAL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0325

STEP NO--UR/007C/70/015/002/0392/0393

CIRC ACCESSION NO--AP0124084

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2/2 029

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PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124084

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFERENCES IN THE RATE OF GROWTH OF GAP CRYSTALS FROM THE MELT, DOPED WITH ZN AND O IMPURITIES, IN VARIOUS STAGES OF DENDRITIC GROWTH CAUSED UNEQUAL IMPURITY DISTRIBUTION IN THE CRYSTAL, WHICH WAS STUDIED BY MEASURING THE PHOTO AND ELECTROLUMINESCENCE INTENSITIES ON THE SURFACE AND ON THE PLANES AT DEPTHS OF 7-90 MU IN THE CRYSTAL ETCHED WITH HNO SUB3-HCL. TWO MAIN REGIONS DIFFERING IN IMPURITY CONCNS. WERE FOUNDED IN THE VOL. OF THE CRYSTAL: THE CENTRAL DENDRITE STEM REGION CONTG. SUBSTANTIALLY LESS IMPURITIES THAN THE REGION OF THE BRANCHES. IN THE SURFACE LAYER (DEPTH 5-8 MU), A REGION DISPLAYING A GREEN GLOW IN THE ELECTROLUMINESCENCE AND CHARACTERIZED BY HIGH IMPURITY SEGREGATION ALLOWING THE FORMATION OF THE P-N TRANSITIONS WAS OBSD. THE FORMATION OF THIS REGION WAS ASCRIBED TO A MECHANISM OF LAMINAR GROWTH OF THE (111) PLANE.

UNCLASSIFIED

USSR

UDC 539.1

VOROB'YEV, A. A., GRACHEV, V. T., KONDUROV, I. A., NIKITIN, A. M., and SELIVESTROV, D. M., Physicotechnical Institute imeni A. F. Ioffe

"The Formation of Light Nuclei in the Thermal-Neutron Induced Fission Reaction of Uranium Isotopes"

Moscow, Problemy Fiziki Elementarnykh Chastits i Atomnogo Yadra [(Problems of the Physics of Elementary Particles and the Atomic Nucleus)], Atomizdat, Vol 2, No 4, 1972, pp 939-958

Abstract: Consideration is given to the results of an experimental study of light nuclei produced in the process of thermal-neutron induced ternary fission of U^{235} and U^{233} . The experimental installation is described. Instead of using semiconductor-detector $\Delta E - E$ telescopes for identification of the particles, a mass spectrometer was used for simultaneous measurement of the following particle parameters: BP, v , E , $\Delta E/\Delta x$. Data on the yield and energy spectra of hydrogen, helium, lithium, and beryllium isotopes are presented. The yields of all the isotopes were measured with respect to the yield of the alpha-particles. These results are compared with the theoretical data and with data obtained from fission under the action of fast protons. 12 figures, 6 tables, 32 references.
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